UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

May 21, 2007 In Reply Refer To: WTR-7

W. Chung Lee, Director
Occupational Health/Safety and Environmental Compliance
FotoKem
2710 West Olive Avenue
Burbank, California 91505

Re: September 6, 2006 Clean Water Act Inspection

Dear Mr. Lee:

Enclosed is the May 21, 2007 report for our September 6, 2006 inspection of FotoKem. Please submit a short response to the findings in Sections 2 through 4 of this report, to EPA, Burbank, and the Regional Water Quality Control Board, by **July 30, 2007**.

The main findings are summarized below:

1 FotoKem qualifies as non-categorical significant industrial user. FotoKem does not qualify as a secondary silver facility subject to the Federal standards in 40 CFR 421 because only its own photographic wastewaters undergo on-site silver recovery.

2 Compliance with the Burbank local limits is achieved through targeted treatment of fixants for silver and final clarification. The pH limits are met through blending in the large final clarification tanks.

3 Self-monitoring results for continuous pH and flow should be summarized and reported for each month.

I certainly appreciate the helpfulness extended to me by yourself and your staff during this inspection. I remain available to you and Burbank to assist in any way. Please call (415) 972-3504 or e-mail at arthur.greg@epa.gov.

Sincerely,
Original signed by:
Greg V. Arthur
Greg V. Arthur
CWA Compliance Office

Enclosure

cc: Kristy Laird Pickett, United Water, Burbank
Dan Radulescu, RWQCB-Los Angeles

U.S. ENVIRONMENTAL PROTECTION AGENCY

REGION 9

CLEAN WATER ACT COMPLIANCE OFFICE

NPDES COMPLIANCE EVALUATION INSPECTION REPORT

Industrial User:	FotoKem 2800 West Olive Avenue, Burbank, California 91505 Non-Categorical Significant Industrial User
Treatment Works:	City of Burbank Water Reclamation Plant (NPDES Permit CA0055531)
Date of Inspection:	September 6, 2006

Inspection Participants:

US EPA:	Greg V. Arthur, Region 9, CWA Compliance Office, (415) 972-3504
RWQCB-Los Angeles:	None
City of Burbank:	Kristy Laird Pickett, United Water, Source Insp, (818) 972-1115 ex23 Jeff Carter, United Water, Source Manager, (818) 972-1115 ex17
Fotokem:	W. Chung Lee, Director, OHS&EC, (818) 972-1115 ex 738 Pedro Vazquez, Head Chemist, Fotokem Main # (818) 846-3101

Report Prepared By: Greg V. Arthur, Environmental Engineer

May 21, 2007

1.0 Scope and Purpose

On September 6, 2007, EPA, and the City of Burbank conducted a compliance evaluation inspection of FotoKem in Burbank, California. The purpose was to ensure compliance with the Federal regulations covering the discharge of non-domestic wastewaters into the sewers. In particular, it was to ensure:

- Classification in the proper Federal categories;
- Application of the correct standards at the correct sampling points;
- Consistent compliance with the standards; and
- Fulfillment of Federal self-monitoring requirements.

FotoKem is a significant industrial user ("SIU") within the Burbank sewer service area whose compliance was assessed as part of an on-going EPA evaluation of industrial users in EPA Region 9 by sector. The inspection participants are listed on the title page. Arthur conducted the inspection and took photographs on September 6.

1.1 Process Description

FotoKem is motion picture post production facility that among other operations develops motion picture film negatives and copies film masters for distribution. FotoKem also performs video and film editing, mastering, transfers between digital and film, screening, production, film restoration, quality control, and other aspects of post production. The main campus operations are housed in three buildings:

Bldg 2800 on West Olive - film developing and duplication
Bldg 2801 on West Alameda - electronic and digital processing
Bldg 2701 on West Olive - facilities

The chemical processing operations are entirely housed in Bldg 2800. FotoKem does not manufacture film, CD, or DVD blanks or any packaging such as jewel cases. FotoKem discharges non-domestic wastewaters to the Burbank domestic sewers through a single sewer connection designated in this report by permit number as IWD-1089. Domestic sewage discharges through separate connections downstream of the industrial wastewater connection.

1.2 Facility SIC Code

Technical Metal Finishing is assigned the SIC code for motion picture and video tape production (SIC 7812) and motion picture film processing and reproduction (SIC 7819).

1.3 Facility Wastewater Sources

Film developing generates most of the process-related wastewaters requiring discharge or disposal. ***See*** Appendix 1. Also ***see*** the photos in Section 1.6 of this report.

Batch Formulation and Delivery - FotoKem employs a number of batch mixing tanks for the hard-piped delivery of the chemical solutions used throughout Bldg 2800 in the film developing and printing lines. FotoKem prepares the solutions and, by pump and quick-disconnect hosing, delivers them through a pipe gallery to transfer tanks that feed the processing lines on-demand. Some of the principle batch solutions formulated on-site include (1) carbonate pre-bath solution with EDTA chelating agent, (2) carbonate color developer, (3) sulfuric-acid stop bath solution, (4) bleach oxidizer with EDTA, ferric nitrate or persulfate, (5) ammonium thiosulfate fixant, and (6) caustic sound trac developer with hydroquinone and ethylenediamine. The batch mixing tanks and pipe gallery inlets are housed in a room without floor drains. The chemical transfer tanks are sited within secondary containment vaults.

Film Developing - FotoKem operates ten film developing lines to handle different film sizes, such as 16mm, 35mm, and 70mm, for different processing, such as negative black/white, negative color, and positive color. Each line uses different chemistries to accomplish similar processes. Pre-bath solutions activate the film. Developers develop the images. Stop solutions stop the developer chemistry. Bleach solutions oxidize the exposed silver. Fixants remove oxidized silver. The film developing also involves numerous washing steps and DI final rinsing. The film developing lines essentially perform conventional photo processing on long continuous reels of film threaded and pulled through multiple-spooled rack assemblies that are then immersed in the solution and rinse tanks. The fixant spents and rinses are hard-piped for pretreatment through silver recovery before draining to a floor trench system. All other spent solutions and rinses drain to the floor trench system leading to overall final treatment prior to discharge to the sewers. ***See*** Section 1.5 of this report.

Rack Cleaning - The spooled rack assemblies are periodically caustic cleaned in three tanks and work sinks. The caustic spents and sink drainage discharge to the floor trench system leading to overall final treatment prior to discharge to the sewers.

Film Master Duplication - The film master duplication process involves master cleaning with halogenated-chlorinated-fluoro coumpounds "HCFCs" and wet-contact printing in a dark room. In wet-contact printing, the master and new film come into contact frame-by-frame for light exposure bathed in perchloroethylene "perc". The entire process does not generate any wastewaters or waste streams beyond "perc" which is captured for on-site reclaim.

Water Conditioning - City water undergoes conditioning for process use through sand filtration and, for a selected fraction, de-ionization through DI columns. The filtered and DI waters are stored in separate equalization tanks. Sand filter backwash drains to the sewers, however the location of connection could not be verified during this inspection.

Residuals - Silver recovery is off-hauled for resmelting. Spent DI columns are vendor serviced for off-site regeneration. Spent activated carbon is off-hauled for regeneration.

1.4 Facility Process Wastewater Composition

The process wastewaters listed in section 1.3 above would be expected to contain silver, iron, selenium, ammonia, sulfates, nitrates, alkaline conditions, salts and surfactants.

1.5 Facility Process Wastewater Treatment

On-Site Treatment - FotoKem provides silver recovery of the spent fixants and associated rinses through a series of electrowinning cells. The fixant-related solutions circulate from holding tanks through at least ten electrowinning cells, with bleeds from the holding tanks polished through ion exchange for on-site reuse. The ion exchange regenerant, bearing the pollutant load in the silver recovery bleeds, discharges to the floor trench sewers, along with most of the other wastewaters including rack cleaning tail waters, and boiler blowdown. The floor trench sewers drain into to 7,500 gallon clarifiers for equalization and settling prior to discharge to the sewers. The discharge is continuously monitored for pH.

Water Conditioning - Water conditioning tail waters are not treated on-site. Some city water is polished through de-ionization columns with the spent columns hauled for off-site regeneration. Some city water is also polished through sand filtration with the backwash discharged to the sewers through an undisclosed connection.

Other Wastestreams - The wet-contact printing using perchloroethylene reclaims the spent perc through equalization and an activated carbon column.

Sewer Discharge – The final discharge connection from both clarifiers to the sewer is designated as the permitted compliance sampling point, IWD-1089.

1.6 Photo Documentation

Three of the four photographs taken during this inspection are depicted below and saved as *fotokem-1.jpg* through *fotokem-4.jpg*. The photo not depicted here was a duplicate.

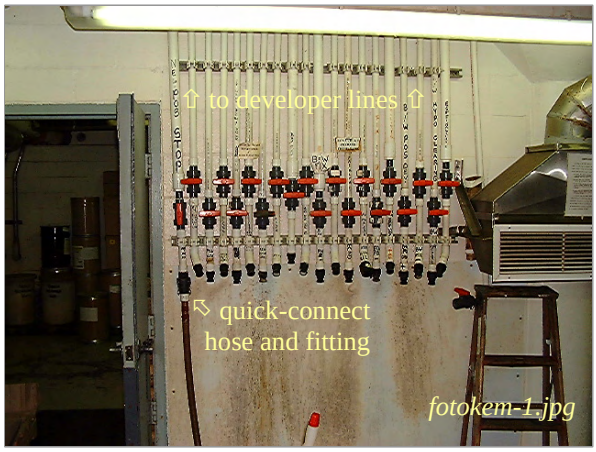


Photo: Chemical Solution Pipe Gallery
Taken By: Greg V. Arthur
Date: 09/06/06

Photo: Floor Trench System
Taken By: Greg V. Arthur
Date: 09/06/06

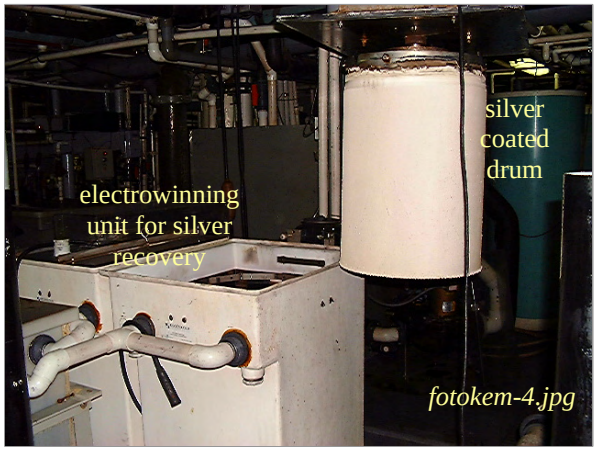


Photo: Electrowinning Drums Coated with Silver
Taken By: Greg V. Arthur
Date: 09/06/06

1.7 POTW Legal Authorities

The City of Burbank – Burbank operates a wastewater treatment plant, which discharges to the Los Angeles River, and an approved pretreatment program, as required by the State of California in the Los Angeles RWQCB's Waste Discharge Requirements, No. R4-2006-0085, reissued to Burbank in 2006 and serving as NPDES Permit No. CA0055531. Burbank has established a sewer use ordinance that applies to all industrial users within its city limits. Under this authority, Burbank issued industrial user permit No.1089 authorizing discharge of process-related discharge to the sewers.

1.8 Sampling Record

Burbank collected three to four compliance samples of FotoKem per year from IWD-1089. In addition, FotoKem self-monitored twice per year as required under the Burbank industrial user permit No. 1089.

2.0 Sewer Discharge Standards and Limits

Federal categorical pretreatment standards (where they exist), national prohibitions, and the local limits (where they exist) must be applied to the sewered discharges from industrial users. (40 CFR 403.5 and 403.6).

Summary

The Burbank permit correctly applies local limits to the discharge from FotoKem into the Burbank sewers. No Federal categorical pretreatment standards apply to FotoKem, however the national prohibitions apply as they do to all non-domestic discharges to publicly-owned treatment works nationwide. The application of Federal categorical standards, national prohibitions, and local limits was determined through visual inspection. See Appendix 2 for the sewer discharge standards and limits.

Requirements

- None.

Recommendations

- None.

2.1 Classification by Federal Point Source Category

FotoKem qualifies as a significant industrial user of the Burbank sewers because the average discharge flows exceed 25,000 gallons per day. FotoKem does not qualify for regulation under any of the Federal categorical pretreatment standards set forth in 40 CFR 407-471. In particular, the Federal standards for secondary silver in 40 CFR 421 Subpart L do not apply because FotoKem recovers silver from its own waste streams as a form of wastewater treatment. The Federal standards for secondary silver apply to the business of silver recovery, for example from facilities that process photographic wastes collected from off-site photo developers for silver content or as part of a larger comprehensive waste handling service. That FotoKem receives payment for the recovered silver is irrelevant. Burbank correctly classified Fotokem. ***See*** Appendix 2.

2.2 Local Limits and National Prohibitions

Local limits and the national prohibitions are meant to express the limitations on non-domestic discharges necessary to protect the sewers, treatment plants and their receiving waters from adverse impacts. In particular, they prohibit discharges that can cause the pass-through of pollutants into the receiving waters or into reuse, the operational interference of the sewage treatment works, the contamination of the sewage sludge, sewer worker health and safety risks, fire or explosive risks, and corrosive damage to the sewers. The national

prohibitions apply nationwide to all non-domestic sewer discharges. The Burbank local limits apply to non-domestic discharges within the Burbank city limits.

2.3 Point(s) of Compliance

The permit designates the final clarifiers inside the facility as the compliance point (designated in this report as IWD-1089). Local limits and the national prohibitions apply end-of-pipe to all non-domestic flows. The sample point designated as IWD-1089 is a suitable end-of-pipe sample point representative of the day-to-day non-domestic wastewater discharges.

2.4 Compliance Sampling

The national prohibitions are instantaneous-maximums and are comparable to samples of any length including single grab samples.

3.0 Compliance with Local Limits and National Prohibitions

All non-domestic wastewater discharges to the sewers must comply with local limits and the national prohibitions. 40 CFR 403.5(a,b,d).

Industrial users must comply with the provision restricting the bypass of treatment necessary to comply with any pretreatment standard or requirement. 40 CFR 403.17(d).

Summary

The processes at FotoKem would be expected to generate wastewaters containing silver, iron, selenium, ammonia, sulfates, nitrates, alkaline and acidic conditions, salts and surfactants. FotoKem provides electrowinning silver recovery from fixant-related wastewaters and unaided clarification of all combined process-related flows. FotoKem does not provide final pH adjustment. There have been no violations of the local limits for all pollutants of concern except one, a single violation of the sulfate local limit in May 2005. ***See*** Appendix 3. Also ***see*** Section 4.0 of this report.

Requirements

- None.

Recommendations

- FotoKem should provide descriptions of the on-site source control measures in practice for selenium and sulfates and explain the reason behind the violation of the local limit for sulfates.

3.1 National Objectives

The general pretreatment regulations were promulgated in order to fulfill the national objectives to prevent the introduction of pollutants that:

(1) cause operational interference with sewage treatment or sludge disposal,
(2) pass-through sewage treatment into the receiving waters or sludge,
(3) are in any way incompatible with the sewerage works, or
(4) do not improve the opportunities to recycle municipal wastewaters and sludge.

This inspection did not include an evaluation of whether achievement of the national objectives in 40 CFR 403.2 have been demonstrated by the Burbank wastewater treatment plant through consistent compliance with their sludge and discharge limits.

3.2 Adequacy of Treatment

The sample record indicates that the targeted silver recovery of fixants-related wastewaters and the overall clarification, for the most part, results in consistent compliance with the Burbank local limits. The lone exception, one sample in May 2005, exceeded the local limit for sulfates. Neither silver recovery nor unaided clarification would remove sulfates. As a result, compliance with the sulfates limits relies entirely on source control practices which were unidentified during this inspection. Compliance for selenium, one of the few pollutants with a measurable potential to exceed the local limit, also entirely relies on unidentified source controls. The pH limits are met through the blending of alkaline and acid wastewaters in the large clarifiers which results in uncontrolled pH neutralization. Finally, the delivery of solutions and rinses from the processing lines either to the electrowinning cells or to the floor trench system is entirely through hard-piping.

3.3 Bypass Provision

The Federal standards in 40 CFR 403.17 prohibit the bypassing of any on-site treatment necessary to comply with standards unless the bypass was unavoidable to prevent the loss of life, injury, or property damage, and there were no feasible alternatives. This provision explicitly prohibits bypasses that are the result of a short-sighted lack of back-up equipment for normal downtimes or preventive maintenance. It also explicitly prohibits bypasses that could be prevented through wastewater retention or the procurement of auxiliary equipment. It specifically allows bypasses that do not result in violations of the standards as long as there is prior notice and approval from the sewerage agency or State.

Compliance is achieved at FotoKem through the limited treatment of fixants through silver recovery and equalization and settling of all process-related wastewaters through the clarifiers. There was no evidence at FotoKem of the unauthorized bypassing of fixants around silver recovery nor of process-related contact wastewaters around the clarifiers, in particular because all flows were hard-piped to their destinations.

4.0 Compliance with Federal Monitoring Requirements

Significant industrial users must self-monitor for all regulated parameters at least twice per year unless the sewerage agency monitors in place of self-monitoring. 40 CFR 403.12(e) & 403.12(g).

Each sample must be representative of the sampling day's operations. Sampling must be representative of the conditions occurring during the reporting period. 40 CFR 403.12(g) and 403.12(h).

Summary

The sample record for FotoKem does not involve self-monitoring for toxics and toxic metals but rather consists of only monitoring conducted by Burbank. All of the monitoring results are representative of the overall discharge of treated and untreated wastewater over both the sampling day and over the six-month reporting period. Monitoring encompasses the pollutants of concern comprising the pollutants generated in significant amounts (*aluminum, selenium, silver, TDS, chloride, sulfates, and pH*). FotoKem appropriately conducts continuous self-monitoring for pH and flow but does not summarize the results in the reports.

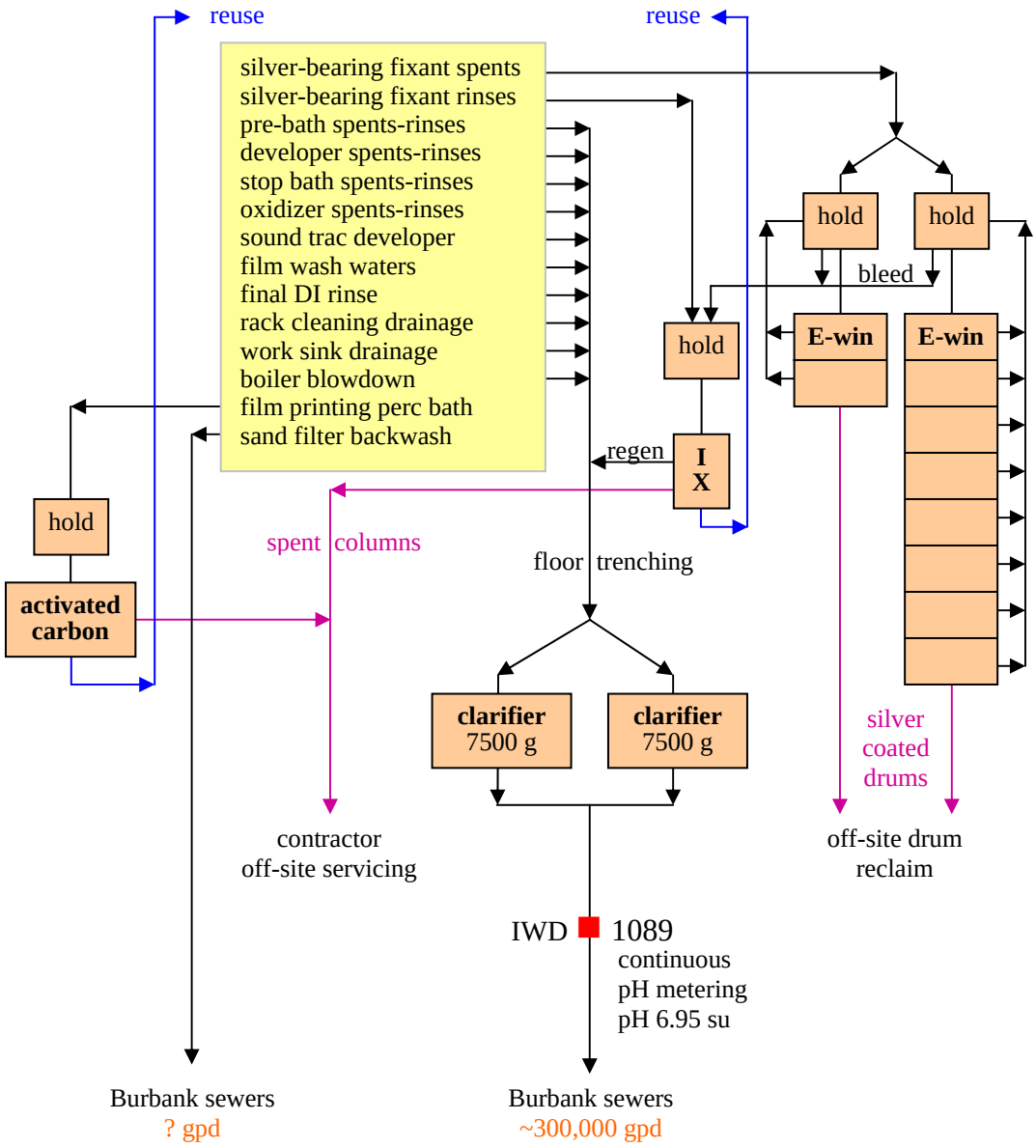
Requirements

- None.

Recommendations

- Self-monitoring results for continuous pH and flow should be summarized and reported each month. The pH each day should be summarized by the number of minutes below 2.0, between 2.5 and 5.5, between 5.5 and 9.5, between 9.5 and 12.0, and above 12.5.
- FotoKem should ensure that sampling accounts for the sand filter backwash.
- Periodic self-monitoring and reporting could be limited to just the pollutants and parameters of concern (*aluminum, selenium, silver, TDS, chloride, sulfates, pH, and flow*).

Appendix 1
FotoKem
Schematic of the Wastewater Collection and Treatment



Appendix 2
Sewer Discharge Standards and Limits
FotoKem @ IWD-1089

pollutants of concern (mg/l)	Fed categorical stds none (d-max)	(mo-av)	local limits nat'l prohib (instant)	monitoring frequency IWD-1089
aluminum	-	-	-	2 / 6-months
arsenic	-	-	3.0	③
cadmium	-	-	15.0	③
total chromium	-	-	10.0	③
hex chromium	-	-	3.0	③
copper	-	-	15.0	③
lead	-	-	5.0	③
iron	-	-	-	③
mercury	-	-	0.005	③
nickel	-	-	12.0	③
silver	-	-	3.0	2 / 6-months
zinc	-	-	25.0	③
total cyanide	-	-	10.0	③
amenable cyanide	-	-	2.0	③
total toxic organics	-	-	5.0	③
oil & grease-total	-	-	300.	③
oil & grease-free	-	-	none visible	③
phenol	-	-	1.5	③
selenium	-	-	1.0	2 / 6-months
volatile organic compounds	-	-	4.0	③
biochem oxygen demand	-	-	1000.	③
chem oxygen demand	-	-	1000.	③
total suspended solids	-	-	1000.	③
total dissolved solids	-	-	-	2 / 6-months
phosphates	-	-	50.0	③
sulfates	-	-	420.	2 / 6-months
chlorides	-	-	275.	2 / 6-months
dissolved sulfides	-	-	0.1	③
flow (gpd)	-	-	-	continuous
pH min and max (s.u.)	-	-	5.5-9.5 s.u.	continuous
explosivity	-	-	① ②	③
temperature (°F)	-	-	104°F	③

① National-prohibitions – Closed-cup flash point <140°F and pH <5.0 su.
② Narrative prohibition against the introduction of flammable or explosive substances
③ As part of periodic priority pollutant scans in order to identify changes in discharge quality

red – proposed increase black – unchanged green – proposed decrease

Appendix 3
FotoKem Sampling Results @ IWD-1089
January 2004 – April 2007

pollutant (µg/l)	IWD-1089 (Jan04-Apr07)			Sewer (01/24/07) ②		violation rates ①			sample count
	mean	99th%	max	upstream	downstr	d-max	4-day	local	
aluminum	505.5	629.1	543	100	70	-	-	0/2	2
arsenic	14.5	40.5	32	<0.2	16.7	-	-	0/6	6
cadmium	<0.2	<0.2	<0.2	<0.2	<0.2	-	-	0/4	4
chromium	10.2	16.8	13.5	5.2	4.1	-	-	0/8	8
copper	19.3	38.3	36.8	101	17.9	-	-	0/9	9
lead	0.6	1.9	1.6	<0.2	0.4	-	-	0/8	8
mercury	-	-	-	-	-	-	-	-	0
nickel	3.5	6.4	4.7	4.6	3.9	-	-	0/4	4
selenium	105.8	426.1	506	3.9	65.5	-	-	0/11	11
silver	78.5	257.7	204	1.3	4.9	-	-	0/11	11
zinc	15.1	42.0	41.8	136	16.8	-	-	0/9	9
cyanide-amenable	-	-	-	-	-	-	-	-	0
cyanide-total	-	-	-	-	-	-	-	-	0
total toxic organics	-	-	24.4	-	-	-	-	0/1	1
TDS (mg/l)	924.9	1263.2	1134	688	1020	-	-	-	7
TSS (mg/l)	7.2	26.6	23	395	18	-	-	0/7	7
BOD (mg/l)	-	-	31	294	74	-	-	0/1	1
chloride (mg/l)	75.5	186.2	185	156	124	-	-	0/11	11
sulfates (mg/l)	252.0	645.1	730	221	355	-	-	**1/12**	12
oil & grease (mg/l)	-	-	-	12	<5	-	-	-	0
pH min (s.u.)	7.0 ③	-	6.1	-	-	-	-	0/6	6
pH max (s.u.)		-	7.8	-	-				

① Daily-maximums and four-day averages comparable to Federal categorical standards
② Sewer surveillance samples taken immediately upstream and downstream of FotoKem.
③ pH median